

CAREERS IN BIOLOGY

What Can I Do With This Degree? BIOLOGICAL SCIENCES

A Bachelor's degree in Biology will qualify you for work as a laboratory assistant, technician, technologist, or research assistant in education, industry, government, museums, parks, and gardens.



Join professional associations and community organizations to stay abreast of current issues in the field and to develop networking contacts. Read scientific journals related to your area of interest.

An undergraduate degree can also be used for nontechnical work in writing, illustration, sales, photography, and legislation.

Maintain a high grade point average to improve chances of graduate and professional school admission.

Master's degrees allow for more opportunities in research and administration. Some community colleges will hire Master's level teachers.

Become familiar with the specific entrance exam for graduate or professional schools in your area of interest.

Doctoral degrees are necessary for advanced research and administrative positions, university teaching, and independent research.

Secure strong relationships and personal recommendations from professors and/or employers.

An advanced degree provides the opportunity to specialize under the different areas of the biological sciences.

Consider completing a post-doctoral experience after graduate school.

The biological sciences are good preparation for a career in healthcare such as medicine, dentistry, and veterinary science, but professional degrees and licenses are also necessary to practice in these fields.

Learn federal, state, and local government job application process. The federal government is the largest employer of biologists.

Learn laboratory procedures and become familiar with equipment.

Gain experience with grant writing and fundraising techniques. Often research must be funded in this manner.

Obtain summer, part-time, volunteer, co-op, or internship experience to test the fields of interest and gain valuable experience.

Career areas include biotechnology, genetics, microbiology, botany, systematic biology, entomology, marine biology, zoology, biomedical, bioinformatics, education, healthcare, technical sales, law, technical sales, technical writing, biological illustration, and biological photography.

Develop strong computer, mathematics, and verbal and written communications skills.



BIOTECHNOLOGY

Research and Development
Laboratory Testing
Education

EMPLOYERS

Colleges and universities
Pharmaceutical companies
Agricultural industry including fertilizer manufacturers and animal and plant breeding and production
Federal and state government laboratories and agencies
Industry, particularly biotechnology firms

STRATEGIES

Become proficient using laboratory equipment and computers. Acquire a Ph.D. for college and university teaching and advanced positions in research, development, and management. Take additional courses in chemistry, physics, and mathematics. Complete an undergraduate laboratory research project with a professor.

GENETICS

Research and Development related to Animals, Plants, and Humans
Genetic Counseling
Education

EMPLOYERS

Colleges and universities
Pharmaceutical companies
Large producers of seed, livestock, and poultry
Government laboratories such as: Department

of Agriculture, Fish and Wildlife Service, and National Institutes of Health
Biotechnology industry
Hospitals and medical centers

STRATEGIES

Acquire a broad background in sciences, mathematics, and computer technology. Obtain a Ph.D. for teaching and advanced positions in research and management. Earn a master's degree from an accredited program for genetic counseling. Complete an undergraduate research project with a professor. Find a related internship with an organization in the area of your interest.



MICROBIOLOGY

Research and Development
Education
Quality Control

EMPLOYERS

Colleges and universities
Private research foundations
Government research laboratories and service agencies
Hospitals and public health facilities
Agricultural experiment stations
Food, chemical, pharmaceutical, and cosmetic companies
Industry including wood products, paper, textiles, optical equipment, leather, and electrical equipment
Environmental and pollution control agencies

STRATEGIES

Obtain a Ph.D. for teaching and advanced research and management positions. Develop additional competencies in chemistry, mathematics, and physics. Take courses related to your field of interest or consider an advanced degree to specialize. Find a related internship with an organization in the area of your interest. Complete an undergraduate research project with a professor. Develop strong skills using laboratory equipment and computers.



BOTANY

Education
Research and Development
Conservation
Production
Quality Control
Administration

EMPLOYERS

Colleges and universities
Medical and private research laboratories
Pharmaceutical industry
Industries and laboratories involved in production of food, textiles, chemical, and forestry products
State and federal government, especially the Departments of Agriculture, Interior, and Health
Botanical gardens and arboreturns
National and international environmental Organizations

STRATEGIES

Conduct undergraduate research with professors. Join related professional organizations. Take courses in this specialized area or consider an advanced degree for more opportunities. Take courses in organic chemistry, biochemistry, and physics. Obtain a Ph.D. for teaching and advanced positions in research and management. Complete a related internship with an organization in the area of your interest.

SYSTEMATIC BIOLOGY

Education
Research and Development
Taxonomy
Conservation
Consulting
Administration

EMPLOYERS

Colleges, universities, and agricultural colleges
Federal agencies including Departments of Agriculture and Interior
State and local agencies
Private research foundations
Museums
Botanical gardens and arboreturns
Zoos and aquariums
Public health laboratories
Hospitals
National and international environmental organizations

STRATEGIES

Earn a Ph.D. for college and university teaching and advanced research and management positions. Develop excellent laboratory and computer skills. Get involved with undergraduate research with professors. Join related professional organizations. Complete a related internship with an organization in the area of your interest.



ENTOMOLOGY

Education
Research and Development
Toxicology
Conservation
Quality Control

EMPLOYERS

Colleges and universities, especially colleges of agriculture and veterinary medicine
Industry including food producers and processors, chemicals for insect control, and lumber and pulp
Chemical companies
Pest control companies
Federal and state government
Health agencies
Agricultural experiment stations
Inspection agencies and control boards
Conservation agencies

STRATEGIES

Acquire a Ph.D. for college and university teaching and advanced research and management positions. Conduct undergraduate research with professors. Join related professional organizations. Take courses in this specialized area or consider an advanced degree for more opportunities. Complete a related internship with an organization in the area of your interest.

MARINE AND AQUATIC BIOLOGY

Research and Development
Education
Administration

Production
Quality Control
Conservation

EMPLOYERS

Federal, state, and local government
Inspection organizations
Private recreation organizations
Research laboratories
Colleges and universities
Zoos and aquariums
Fish hatcheries
National and international environmental agencies

STRATEGIES

Develop a good foundation in mathematics, physics, computer science, statistics, and chemistry. Acquire a Ph.D. for college and university teaching and advanced research and management positions. Obtain experience related to fishing and boating. Complete a related internship with an organization in the area of your interest. Take specialized courses in this area or consider an advanced degree for more opportunities.



ZOOLOGY

Animal Care/Training
Research and Development
Conservation
Administration
Education

EMPLOYERS

Wildlife preserves and parks
Zoos and aquariums
Museums
Research organizations
Pharmaceutical, chemical, and agricultural

service industries
Federal, state, and local government
Colleges and universities
Veterinary hospitals
Clinics and hospitals

STRATEGIES

Obtain experience working with animals and various related laboratory equipment. Develop a broad background in biology and other related subjects such as chemistry, physics, mathematics, and statistics. Obtain a Ph.D. for teaching and advanced research and management positions. Complete a related internship with an organization in the area of your interest. A zoological background is good preparation for a career in veterinary science or medicine, but an advanced degree is also required to practice.



BIOMEDICAL

Physiology
Biophysics
Biochemistry
Pharmacology
Immunology
Pathology
Research and Development
Education
Quality Control

EMPLOYERS

Colleges and universities
Professional schools including colleges of pharmacy, dentistry, medicine, veterinary medicine, and agriculture

Clinics and hospitals
Private research foundations
Pharmaceutical companies
Federal laboratories and regulatory agencies
Independent testing laboratories
Public health departments
Agricultural experiment stations
Industrial laboratories including chemical, petroleum, food processing, drug, and cosmetic manufacturers

STRATEGIES

Obtain a Ph.D. for college and university teaching and advanced research positions. Acquire a background in physics, organic and physical chemistry, mathematics, and anatomy. Take courses in area(s) of specialization and/or consider an advanced degree; some may require an M.D. Complete a related internship with an organization in the area of your interest.

BIOINFORMATICS

Research and Development
Education

EMPLOYERS

Biotechnology industry
Pharmaceutical companies
Government research laboratories
Universities and colleges

STRATEGIES

Double major or minor in computer science. Acquire experience working in teams. Develop in-depth programming and relational database skills. Learn molecular biology packages, web design, and programming skills. Complete an internship in your area of interest.

EDUCATION

Teaching
Non-Classroom Education

EMPLOYERS

Universities and colleges
Medical and other professional schools
Public and private schools, K-12
Museums
Zoos and aquariums
Nature centers and parks

STRATEGIES

Certification is required for K-12 school teachers, and Ph.D. is needed in universities and colleges. Gain experience working with students through tutoring, interning, or volunteering. Learn to work well with all types of people. Develop excellent interpersonal and public speaking skills.



HEALTHCARE

Medicine
Dentistry
Optometry
Podiatry
Chiropractic
Pharmacy
Veterinary Medicine
Public Health
Allied Health
Occupational Therapy
Physical Therapy

EMPLOYERS

Hospitals
Medical centers
Nursing homes
Private practice
Government agencies
Armed forces
Home health organizations
Universities and schools
Non-profit organizations

STRATEGIES

Plan to attend a medical school or other related graduate program. Maintain an outstanding grade point average, particularly in the sciences. Secure strong faculty recommendations. Meet with a pre-health advisor periodically. Join related student organizations. Demonstrate leadership abilities. Obtain a summer job, volunteer position, or an internship in a hospital. Develop a back-up plan in case medical/graduate school admission is denied. Consider alternative but related careers such as physician assistant and nurse practitioner.

TECHNICAL & INDUSTRIAL SALES

Pharmaceutical Sales
Medical Equipment/Supplies Sales

EMPLOYERS

Manufacturing firms including:
Pharmaceuticals
Veterinary pharmaceuticals and supplies
Laboratory equipment
Medical supplies and prostheses

STRATEGIES

Develop excellent communication and interpersonal skills. Take courses in anatomy, pharmacology, and chemistry. Obtain sales experience and/or a business minor. Hold leadership positions in campus organizations. Join the student American Marketing Association.

LEGISLATION/LAW

Lobbying
Regulatory Affairs
Science Policy
Patent Law
Environmental Law

EMPLOYERS

Federal and state government
Law firms
Large corporations

STRATEGIES

Acquire internships in federal or state government. Develop excellent communication and interpersonal skills. Acquire a Ph.D for advanced positions. Take courses in history, political science and/or legal studies. Earn a J.D. degree to practice law.

BIOLOGICAL PHOTOGRAPHY

Scientific Photographer
Nature Photographer
Medical /Dental Photographer

EMPLOYERS

Major medical, dental, and veterinary schools
Research centers
Federal government
Museums
Zoological and environmental societies
Publishing houses
Free-lance

STRATEGIES

Acquire thorough knowledge of photographic procedures and technology. Become skilled with medical and scientific instruments including microscopes. Take specific courses in biological, medical, and ophthalmic photography; courses in illustration and printing are also helpful.

BIOLOGICAL ILLUSTRATION

Scientific Illustrator
Medical/Dental Illustrator

EMPLOYERS

Publishing companies including scientific magazines, professional journals, periodicals, textbooks, and online publishers
Educational and scientific software companies
Medical, dental and veterinary colleges

STRATEGIES

Double major or minor in graphic illustration. Acquire word processing and desktop publishing skills. Find a part-time, summer, co-op or internship position with a publisher or newspaper.

TECHNICAL WRITING

Writing
Editing

EMPLOYERS

Newspapers
Publishing companies including scientific magazines, professional journals, periodicals, textbooks, and online publishers
Medical and veterinary colleges

STRATEGIES

Take advanced courses in technical writing or journalism classes or consider a minor in either. Develop strong writing skills and command of the English language. Obtain an advanced degree in scientific journalism.